

Name: _____ Date: _____

History of the Atom Worksheet

Who are the scientists most well-known for their contributions to the history of the atom? What were their specific achievements?

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Answers

Who are the scientists most well-known for their contributions to the history of the atom? What were their specific achievements?

Four scientists have contributed the most to the modern understanding of the atom.

John Dalton: Dalton theorized that all matter comprises small indivisible particles called atoms. These atoms would combine in specific whole number ratios to form compounds.

J. J. Thompson: Thompson was experimenting with gas discharge tubes, when he observed movement within the tube. He deduced that the movement was caused by phenomena that he named 'cathode rays' and that these rays were moving from the negative end to the positive end. This led to him concluding that the rays were made of negatively charged particles, which we nowadays know to be electrons.

Ernest Rutherford: Known for his famed gold-foil experiment, Rutherford would determine that most of an atom consists of empty space. He did this by subjecting a thin strip of gold foil to alpha bombardment, most of which passed straight through the foil without encountering resistance. However, some alpha particles were deflected as if they hit something in the centre, and the fact that the positively charged alpha particles were repelled indicated to Rutherford that the centre of an atom is positively charged.

Niels Bohr: Bohr would propose an atomic model similar to a solar system, where electrons would revolve around the nucleus like planets moving around the sun. The electrons would move in specific levels that had the same energy as them. Electrons could gain or lose energy to move up or down certain energy levels. These levels could only hold a specific number of electrons. For example, level 1 can only hold 2 electrons, level 2 can hold 8 electrons, level 3 can hold 18 electrons, and so on.